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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,804	03/30/2004	Tommy Chi Fai Po	MCHK/166/US	7538
2543	7590	03/29/2005	EXAMINER	
ALIX YALE & RISTAS LLP 750 MAIN STREET SUITE 1400 HARTFORD, CT 06103			ALI, HYDER	
			ART UNIT	PAPER NUMBER
			3747	

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SN

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/813,804	PO, TOMMY CHI FAI	
	<b>Examiner</b>	<b>Art Unit</b>	
	HYDER ALI	3747	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1,2,7,10,11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Rowe (US 5,606,938).**

As to Claim 1, Rowe discloses an engine 10 comprising: a block 12, an output shaft 16 mounted to rotate within the block 12, a profiled cam 20 attached to or formed integrally with the output shaft 16, a plurality of bores 30 in the block 12 extending substantially radially from the output shaft 16, a respective reciprocating piston 40 within each bore 30 and defining an expansion volume within the bore at one side thereof, a respective fixed push bar 42 extending from each piston 40 toward the output shaft 16 and interacting with the profiled cam 20 to effect rotation thereof, and inlet 74 and exhaust 72 ports communicating with the expansion volume 30.

As to Claim 2, Rowe discloses a valve 62 at each inlet port 74.

As to Claim 7, Rowe discloses cam 20 comprises a plurality of circumferentially spaced lobes.

As to Claim 10, Rowe discloses the exhaust port 72 extend from a side of each bore at a position below that at which the respective piston minimizes volume.

As to Claim 11, Rowe discloses a roller 46 at an end of each push rod for rolling contact with the profiled cam 20.

As to Claim 13, Rowe discloses a slider 46 at an end of each push rod for sliding contact with the profiled cam 20.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**2. Claims 3-5,8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rowe (US 5,606,938) in view of Mayne (US 5,875,755).**

Rowe discloses the limitation as sets forth in claim 1.

Rowe does not disclose a combustion manifold within which a pressurized fuel-air mixture ignites as recited in claim 3.

Mayne discloses a combustion manifold 10 within which a pressurized fuel-air mixture ignites.

It would have been obvious to a person having ordinary skill in the art to modify Rowe by employing a combustion manifold 10 within which a pressurized fuel-air mixture ignites in order to improve the efficiency of the intake air distribution.

With regard to claim 4, Rowe does not disclose a compressor for compressing an air-fuel mixture within the manifold, but Mayne discloses a compress air inlet 32 from a

compressor for compressing an air-fuel mixture within the manifold. It would have been obvious to combine for intake air distribution efficiency.

With regard to claim 5, Mayne discloses ignition means 31 for igniting a fuel-air mixture within the combustion manifold.

With regard to claim 8, Rowe discloses in the embodiment of Figs. 9A-9C each lobe has a convex side 183A and a concave side 180.

With regard to claim 16, Mayne discloses ignition means 31 for igniting a fuel-air mixture within the combustion manifold.

**3. Claims 6,12,14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rowe (US 5,606,938) in view of Mayne (US 5,875,755).**

The combine references of Rowe in view of Mayne show all the limitations as cited above except, ignition means comprises a pilot light.

It would have been an obvious matter of design choice for one of ordinary skill in the art to modify Rowe in view of Mayne by using ignition means comprises a pilot light in place of spark plug 31, because applicant has not disclosed that an ignition means comprising means a pilot would solve specific problem. Further a pilot light would work the same way as spark plug.

Similarly, the limitation of claims 12,14 and 15 would have been obvious matter of design choice of one of ordinary skill in the art for the same above cited reasons.


4. **Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rowe (US 5,606,938) in view of Pien (US 6,799,542).**

Rowe does not disclose connecting rod is offset so as not to point directly at the output shaft as recited in claim 9. However, with regard to claim 9, Pien discloses connecting rod 21 is offset so as not to point directly at the output shaft 15. It would have been obvious to a person having ordinary skill in the art to modify Rowe by employing connecting rod 21 is offset so as not to point directly at the output shaft 15 as taught by Pien in order to improve engine efficiency.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HYDER ALI whose telephone number is (571) 272-4836. The examiner can normally be reached on M-F (8:30-5:00). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HENRY YUEN can be reached on (571) 272-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hyder Ali  
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MAHMOUD GIMIE  
PRIMARY EXAMINER